

# A NEW VARIETY OF *HEDEOMA HYSSOPIFOLIUM* GRAY (LAMIACEAE)

JAMES HENRICKSON

Department of Biology, California State University  
Los Angeles, CA 90032, U.S.A.

## ABSTRACT

Disjunct populations of *Hedeoma byssopifolium* from northeastern Chihuahua and western Coahuila differ from Arizona and southwestern New Mexico populations in their more erect, nonrhizomatous stature, more angular stems with vestiture restricted to decurrent lines, larger inflorescences, shorter, nonciliate lower calyx lobes and are recognized as *Hedeoma byssopifolium* var. *chihuahuensis* Henrickson.

During preparation of the treatment of Lamiaceae for the Chihuahuan Desert Flora it became apparent that the disjunct populations of *Hedeoma byssopifolium* from northeastern Chihuahua and adjacent Coahuila differ in a number of substantial characters from populations of central and southeastern Arizona and adjacent New Mexico, and Sonora. The Chihuahuan Desert populations are described below as a distinct variety.

*HEDEOMA HYSSOPIFOLIUM* Gray var. *chihuahuensis* Henrickson var. nov.

A *H. byssopifolio* var. *byssopifolio* caudice bene evoluta superficiali (non subterraneo, non polyrhizomifero), internodiis mediacaulinis folia longioribus (non brevioribus), caulibus quadrangularibus (non rotundato-quadrangularibus), dichasio axillari (1-3-7(-13)-floro (non 1(-3)-floro), calycis lobis superis acicularibus, rectis vel debile sursum arcuatis (non angustideltoideis et valde recurvatis) lobis inferis 1-2.2 mm longis debile ciliatis (non (1.4-)2.2-3.3 mm valde ciliatis) differt.

Erect-ascending suffrutescent herbs 2.5-4(-6) dm tall developing from a woody crown; stems several from base, unbranched or rarely branched in inflorescence; lower internodes 5-10 mm long, mid-stem internodes (12-) 17-26 mm long, 0.7-1.3 mm wide, upper stem internodes 3-10 mm long; stems glabrous or hirtellous with erect hairs 0.05-0.15 mm long in decurrent lines below nodes, quadrangular, shallowly sulcate on surfaces alternate to leaves. Leaves linear-lanceolate, (8-)15-26 mm long, 1-2 mm wide, acute at tip, cuneate at sessile base, entire, glabrous, firm, erect-ascending, shorter than nodes, smooth above, with medial and lateral veins slightly raised, straight and with sunken glands beneath; leaf margins not forming an interpetiolar rim across nodes. Flowers borne in upper fourth of plant in paired, axillary, (1-3-7)-flowered dichasia,

with lateral branches sometimes proliferating monochasially producing up to 13 flowers per inflorescence; bracts and bracteoles leaf-like in shape and texture; bracteoles 1–2.5 mm long, usually longer than peduncles; peduncles 0.5–1(-3); pedicels 1.5–2.5(-7) mm long, both short hirtellous; calyx tubes cylindrical, slightly tapered at base, slightly ampliate, 4.5–6.8 mm long, strongly ribbed, glabrous to short hirtellous; upper 3 calyx lobes acicular, 0.5–1.2 mm long, mostly straight or very slightly curved upward, lower calyx lobes acicular, 0.9–2.2 mm long, weakly ciliate with hairs to 0.1 mm long; calyx annulus at orifice of throat, hairs 0.5–0.7 mm long; corollas lavender to pink, 10–13 mm long, tube straight, slightly ampliate above, upper lobe erect, emarginate, lower 3 lobes spreading, middle lobe longest, emarginate; filaments 3–4 mm long, anthers 1.0–1.1 mm wide (fig. 1a–e).

TYPE: MEXICO. CHIHUAHUA: road from Castillon to Mula, via S. Salvador and Piramide, basaltic cliffs near Virulento, crevices of cliffs, 8–24 inches tall, corollas pinkish, 21–22 Sep 1940, *I.M. Johnston & C. H. Muller 1432* (HOLOTYPE: LL; ISOTYPE: GH).

Additional collections: MEXICO. COAHUILA: Cañon del Indio Felipe, a deep wooded canyon with running water in the igneous Sierra Hechiceros, close to the Chihuahuan bountry; crevices in cliffs, abundant, fls. lavender, 27–29 Sep 1940, *R. M. Stewart 80* (GH, LL); same area; crevices of cliffs, not abundant, flowers lavender, 27–29 Sep 1940, *R. M. Stewart 153* (GH, LL); Sierra de Hechiceros: Canyon del Indio Felipe, (beyond Puerto del Aire) from Rancho El Tule; crevices of cliffs in deep canyon, corolla lavender, 18 Sep 1940, *I. M. Johnston & C. H. Muller 1352* (LL).

*Hedeoma byssopifolium* var. *chihuahuensis* appears restricted to rocky crevices of cliffs in margins of mesic canyons in igneous mountains (Sierra de Hechiceros, Sierra del Virulento) in the Northern Chihuahuan Desert. These populations lie some 550 km southeast of the nearest populations of *H. b.* var. *byssopifolium* in the Animas Mountains in southwestern New Mexico (A. Zimmerman pers. comm.). Irving (1980) notes *Hedeoma b.* var. *byssopifolium* is common in mountains of central and southeastern Arizona and adjacent southwestern New Mexico and Sonora from 1800 to 3100 m where it is most frequent in recently burned areas.

*Hedeoma byssopifolium* var. *byssopifolium* differs from the above in a wide series of characteristics involving habit, stems, inflorescence development and calyces. While the new variety is an erect-ascending plant 2.5–4(-6) dm tall that grows from crevices in cliffs from a distinct woody crown (fig. 1a), the type variety is a shorter (15–25 cm tall), more delicate, widely spreading plant with stems developing from a system of slender, rhizomes that grow in the forest detritus layer (fig. 1f). Stems are decumbent, often rooting at the nodes, more slender (0.5–0.8 mm in diameter), more even-

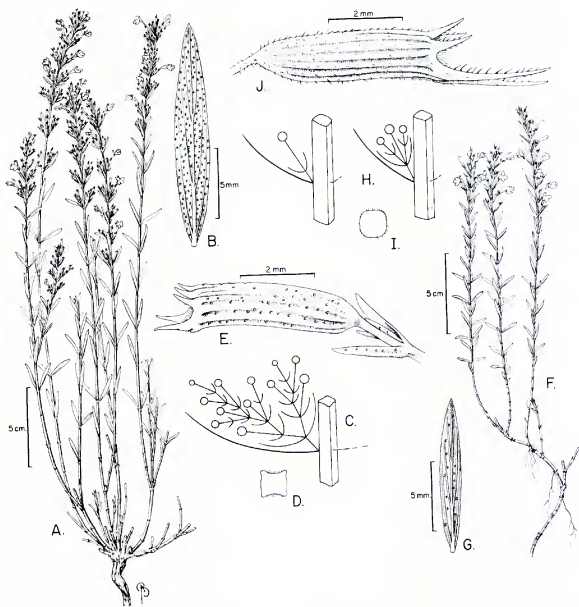


Fig. 1. *Hedecma byssopifolium*. a-e.—*H. b.* var. *chibuhauensis*. a. Habit of type specimen showing woody, basal rootstock, erect-ascending leaves shorter than internodes, and dense cymes of flowers in upper stems. b.—Leaf, abaxial surface showing venation and punctate glands. c.—Diagram of well branched inflorescence showing bracts and monochasial lateral proliferation. d.—Stem cross section, ca 1.0 mm in diameter, showing quadrangular outline and trichomes limited to decurrent lines below nodes. e.—Calyx with bracts showing short, straight upper and lower lobes. All from I. M. Johnston and C. H. Muller 1432 (LL). f-j.—*H. b.* var. *byssopifolium* f.—Habit, note slender rhizomatous rootstalks, slender stems with internodes shorter than leaves and paired flowers at upper nodes. Plants are more extensive, with more stems than shown. D. A. Young 529, (RSA). g.—Leaf, abaxial view showing venation and punctate glands. h.—Diagram of inflorescences showing solitary vs. 3-flowered structure. i.—Cross section of stem ca 0.6 mm in diameter showing rounded-quadrangular nature and trichomes on all surfaces. j.—Diagram of calyx showing longer, distinctly ciliate lower lobes. g-h from M. E. Jones 4330 (TEX). Magnifications as indicated. Delineation by Bobbi Angell.

ly hirtellous to puberulent with straight or recurved hairs 0.06–0.15 mm long, more rounded-quadrangular (fig. 1i) rather than abruptly quadrangular and petiolar margins continue as a distinct shallow rim across the nodes. Mid stem internodes in the type variety are only (3-)6–11 mm long, shorter than the subtending, (7-)11–18 mm long leaves. Flowers in the type variety are borne in 1(-3)-flowered, axillary, secund dichasia (fig. 1h) while in the new variety dichasia more often contain (1-)3–7 flowers, and when lateral dichasial shoots proliferate in a monochasial pattern as many as 13 flowers may form per inflorescence (fig. 1c). Several conspicuous differences occur in the calyces. In the type variety the upper 3-calyx lobes are broad at the base and taper to slender tips, the lobes are distinctly recurved, and 0.8–1.2(-1.4) mm long (fig. 1j). In the new variety the lobes are more slender at the base, straight or only slightly upcurved, and only 0.5–0.9(-1.2) mm long (fig. 1e). Lower calyx lobes of the type variety are straight, mostly 2.2–3.2 mm long, and rather conspicuously ciliate with hairs 0.1–0.5 mm long (fig. 1j) while in the new variety they are only 1–2.2 mm long and obscurely ciliate (fig. 1e). Calyx annulus is slightly better developed in the type variety with the hairs measuring 0.6–0.9 mm long but in both the hairs are exerted. Other minor differences occur in vestiture, with the new variety tending to be more glabrous.

Irving (1980) in his excellent monograph of *Hedeoma* noted that populations of eastern Chihuahua differed from western populations in their glabrous stems, subulate-filiform calyx teeth, and sparse calyx annulus and was perhaps deserving of varietal status. In describing the taxon for a monograph the few disjunct eastern Chihuahuan specimens, while different, can be generally fitted within *Hedeoma byssopifolium* with which they are most closely related. But when preparing a treatment for the Chihuahuan Desert flora the consistency of the many differences become very apparent thus necessitating the nomenclatural recognition of these populations.

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#### REFERENCES

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